THE GODAE HIGH RESOLUTION SST LONG TERM STEWARDSHIP AND REANALYSIS FACILITY AT THE US NODC

Kenneth S. Casey and Tess Brandon
NOAA National Oceanographic Data Center, Silver Spring MD, 20910, USA

Abstract

The Long Term Stewardship and Reanalysis Facility (LTSRF) at NOAA's National Oceanographic Data Center (NODC) serves as the perpetual archive and coordinating center for reanalysis activities for the GODAE High Resolution Sea Surface Temperature Pilot Project (GHRSST-PP). Initial discussions beginning in 2002 led to formal operations in 2006. Since that time, automated archive operations at the GHRSST LTSRF have been successfully maintained with nearly 100% reliability and data volumes in the archive growing to over 13 terabytes by June of 2008. Each day, approximately 1000 netCDF files and over 25 gigabytes are brought into the archive from a variety of satellite sensors and product development systems. These include regional and global Level 4 (L4) analyses and Level 2 Preprocessed (L2P) data for nearly all satellite sensors capable of observing SST, including the AVHRR, AATSR, TMI, AMSR-E, SEVIRI, MODIS, and GOES. User accesses have also been growing rapidly, from 0.3 GB and 28 netCDF files/day in 2006 to 6.2 GB and 1444 netCDF files/day in 2008.

Extensive progress has also been made in meeting the two primary goals of GHRSST reanalsysis: to develop with the international community a suite of improved reanalysis climate data records for SST and to connect these modern primarily satellite-based SST analyses with the longer time series of ship-based SST reconstructions. A new SST intercomparison facility at the LTSRF, built in association with the Global Climate Observing System (GCOS) SST and Sea Ice Working Group, enables users to easily and rapidly compare numerous historical ship-based SST reconstructions, in situ and satellite input data sets, and modern satellite-in situ blended SST analysis products. All of the various datasets and analyses have been transformed to common space-time grids and made available in both Matlab and GHRSST L4 netCDF formats along with a set of intercomparison statistics. This intercomparison framework brings into the GHRSST Reanalysis community the GCOS talent and experience and is enabling significant progress toward developing authoritative long term-records for SST.